



XSD27ZIR-2

Day/Night 600 TVL

IR Speed Dome CCTV Camera

27x Optical Zoom

100m Night Vision

User Manual

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SAFETY CAUTION

WARNING: User shall be reminded to avoid the risk including potential deaths or severe injuries.

1. Please do not install this equipment in the environment with too much moisture or dust.
2. If the unit emits abnormal smell or smoke, immediately shut off the power and contact the supplier.
3. During cleaning, please do not directly spray water on the parts of this equipment.
4. Please do not place the camera near a heat source to avoid fire risk.
5. It is forbidden to store, install and use this product in danger areas with inflammable or explosive substances.
6. During transportation, storage and installation, please handle the product with care to avoid damage.
7. The product should be installed away from any area with vibration or magnetic fields interference.
8. Before moving or reinstalling the camera, please be sure that the power is shut off.
9. The camera should be installed in a site with good ventilation to avoid over heating.
10. In the event that the camera is faulty, please contact your supplier and do not disassemble or reform the product (the manufacturer will not bear any responsibility for any problems resulting from unapproved reformation or repair).
11. During cleaning of the surface of the camera, do not use a chemical cleaning agent as this may result in the deformation of the equipment surface or damage the dome cover.
12. It is important that the dome camera is not left in a position where the camera is pointing directly at the sun or other extremely bright light source. This may result in CCD damage and poor image quality.

1 OVERVIEW

1.1 BRIEF INTRODUCTION AND APPLICATION

The XSD27ZIR-2 can be widely used in the in an area with low light levels, or no light where high-speed monitoring in large scope is required, such as river, forest, road, railway, airport, port, watch, square, park, scenic spot, street, station, large stadium and external boundary of living quarters, etc.

As a high-end monitoring product, the XSD27ZIR-2 features strong, stable and reliable functions in additin to easy operation and installation. This camera has many functions, such as fast trace, 360° unlimited rotation, 180° automatic overturn, area scan, preset location scan and pattern scan.

This camera applies to watching the moving target in a big area, and has the performance that several fixed cameras cannot achieve. Therefore it is widely used in various areas such as airport, station, superstore, political-legal organ, bank, enterprise, warehouse, hospital, etc.

1.2 PRODUCT FEATURES

- Supporting CVBS standard definition video signal output
- Driven by accurate step motor, with stable running and low noise
- Up to 255 programmable preset locations
- Several scan modes such as area scan, preset location scan, pattern scan, etc.
- Multi-function Chinese-English menu with flexible and easy configuration
- Vertical and automatic over turn function can realize the continuous watch without blind area
- Telephoto and limit speed function provides a clear and stable monitoring picture
- Self-adaptive baud rate and communication protocol
- Non-polarity RS485 supports broadcast address and soft address
- Supporting failure detection indication for RS485 communication
- IP66 Protection grade: IP 66
- Infrared dome supporting night vision function
- Ultra lowpower consumption and ultra-strong stability

1.3 TECHNICAL INDICATORS

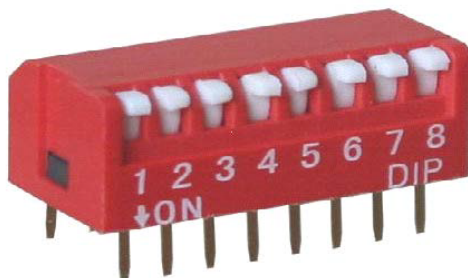
No.	Item	Technical Indicator
1	Video standard	PAL/NTSC
2	Horizontal rotation scope	360° continuous rotation
3	Vertical rotation scope	0° ~ 90° automatic overturn
4	Horizontal operation speed	0.1~ 300° /s
5	Vertical operation speed	0.1~ 240° /s
6	Prese location running speed	300° /s
7	Preset location accuracy	± 0.10°
8	Preset locations	255
9	Menu operation	Supporting multi language (Chinese and English)
10	Function display	Yes
11	Coordinate display	Yes
12	Communication Failure detection and indication	Yes (error indications such as baud rate error, address error, protocol unmatched, etc.)
13	Editable area to be blocked	8 areas
14	Preset location scan	4 (32 preset locations for each routine)
15	Routine scan	4 (left and right boundaries, speed and area name can be set)
16	Pattern scan	4 (there are no less than 200 instructions for each routine)
17	Watch location function	Yes
18	Timing running	Supporting 8 time intervals
19	Integrated protocol	PELCO-D, PELCO-P, Industrial protocol, DH-SD1, YAAN self-adaption
20	Communication baud rate	Self-adaptation 2400/4800/9600/19200 bps
21	RS485	Supporting non-polarity
22	Telephoto and limit speed	Yes

No.	Item	Technical Indicator
23	Power-off memory	Yes
24	Screen freeze	Yes
25	Compatible camera	Automatic Identification SONY/HITACH/CNB/SAMSUNG)
26	Protection grade	IP66
27	Lightning protection	3000 V
28	Working temp	-35° C ~+60° C

2 HARDWARE INSTALLATION

2.1 SETTING OF DIAL SWITCH

2.1.1 POSITION OF DIAL ON SWITCH



2.1.2 ADDRESS SETTING

The address of dome can be set in three ways:

- Address Dial Switch: when the soft address is closed, the dome address will be determined by the dial switch.
- Soft Address: After the Soft address option is opened, the address dial switch will not work. The default soft address will also be closed.
- Broadcasting Address: the fixed broadcasting address of dome if 100; no matter how the dome address is set, key DVR is able to control the dome through 100 addresses.

Comparison list of address dial switch:

Address	1	2	3	4	5	6	7	8
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
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250	OFF	ON	OFF	ON	ON	ON	ON	ON
251	ON	ON	OFF	ON	ON	ON	ON	ON
252	OFF	OFF	ON	ON	ON	ON	ON	ON
253	ON	OFF	ON	ON	ON	ON	ON	ON
254	OFF	ON	ON	ON	ON	ON	ON	ON
255	ON	ON	ON	ON	ON	ON	ON	ON

2.1.3 POWER CONNECTION

Rated Voltage (V)	Scope of rated voltage	Current
DC 12V	Positive & Negative 10%	>4A

2.1.4 CONNECTION OF CONTROL LINE

PTZ control: RS-485 control line is connected to the control keyboard or DVR. If several cameras are controlled at the same time, RS-485 control line shall be set in parallel.

Note:

- ① RS-485 control line can be connected arbitrarily
- ② The protocol and Baudrate controlling keyboard or digital video recorder can be set arbitrarily
- ③ Several cameras in monitor network can be set with different dome addresses.

2.1.5 CONNECTION OF VIDEO LINE

BNC joint is used to connect video signal line directly.

2.1.6 SETTING OF BAUD RATE

Baud rate 2400, 4800, 9600 recognised automatically.

3. OPERATION INSTRUCTION

3.1 MAPPING TABLE FOR PRESET LOCATION

Preset Location	Function
95+CALL	Entering the main menu
XXX+PRESET	Saving some presetting point
XXX+CALL	Calling some presetting point
40+CALL	Operating the first group of preset location scanning
41+CALL	Operating the second group of preset location scanning
42+CALL	Operating the third group of preset location scanning
43+CALL	Operating the fourth group of preset location scanning
44+CALL	Setting the left boundary of area scanning 1
45+CALL	Setting the right boundary of area scanning 1
46+CALL	Setting the left boundary of area scanning 2
47+CALL	Setting the right boundary of area scanning 2
48+CALL	Setting the left boundary of area scanning 3
49+CALL	Setting the right boundary of area scanning 3
50+CALL	Setting the left boundary of area scanning 4
51+CALL	Setting the right boundary of area scanning 4
52+CALL	Operating area scanning 1
53+CALL	Operating area scanning 2
54+CALL	Operating area scanning 3
55+CALL	Operating area scanning 4
56+CALL	Starting the setting of pattern scan
57+CALL	Saving the setting of the first group of pattern scanning

58+CALL	Saving the setting of the third group of pattern scanning
59+CALL	Saving the setting of the third group of pattern scanning
60+CALL	Saving the setting of the third group of pattern scanning
61+CALL	Operating the first group of pattern scanning
62+CALL	Operating the second group of pattern scanning
63+CALL	Operating the third group of pattern scanning
64+CALL	Operating the fourth group of pattern scanning
65+CALL	Starting 360° continuous rotation
67+CALL	Arming of alarming input 1 (for the machines with this function only)
68+CALL	Arming of alarming input 2 (for the machines with this function only)
69+CALL	Disarming of alarming input 1 (for the machines with this function only)
70+CALL	Disarming of alarming input 2 (for the machines with this function only)
71+CALL	Starting alarming output (for the machines with this function only)
72+CALL	Closing alarming output (for the machines with this function only)
75+CALL	Starting the display of status column
76+CALL	Closing the display of status column
77+CALL	Starting vertical flip
78+CALL	Closing vertical flip
79+CALL	Starting guarding function
80+CALL	Closing guarding function
81+CALL	Starting the privacy shelter grid(for the machines with this function only)

82+CALL	Closing the privacy shelter grid(for the machines with this function only)
83+CALL	Starting backlight compensation (for the movement with this function only)
84+CALL	Closing backlight compensation (for the movement with this function only)
85+CALL	Starting image freezing function(for the movement with this function only)
86+CALL	Closing image freezing function(for the movement with this function only)
87+CALL	Starting image mirror function(for the movement with this function only)
88+CALL	Closing image mirror function(for the movement with this function only)
89+CALL	Automatic color-to-black function(for the movement with this function only)
90+CALL	Starting color-to-black function(for the movement with this function only)
91+CALL	Closing color-to-black function(for the movement with this function only)
92+CALL	Closing wide dynamic(for the movement with this function only)
93+CALL	Automatic wide dynamic(for the movement with this function only)
94+CALL	Manual wide dynamic(for the movement with this function only)
95+CALL	Entering the main menu
97+CALL	Starting image rollover(for the movement with this function only)
98+CALL	Closing image rollover(for the movement with this function only)
101+CALL	Defaulted setting
102+CALL	Switch manual operation speed (fast, slow and medium)

103+CALL	Switching linear scanning speed (fast, slow and medium)
105+CALL	Starting digital zoom
106+CALL	Closing digital zoom
107+CALL 、 108+CALL	Calling 107 followed by 108 and restarting the dome
109+CALL	Starting communication fault indication
110+CALL	Closing communication fault indication

3.2 KEYBOARD OPERATION

3.2.1 PRESET LOCATION SCAN

1. Set preset location scan: Preset location scan routine can be set using 2 ways:

See 'Menu set -> Scan Set'

There are a total of 4 preset location routines and 32 preset locations that can be set. The 40th and 43rd preset locations are in turn used to set and call the 1st and 4th preset location routines:

- 1) Execute the command of setting 40th preset location to enter the set status
 - 2) Call the desired set option to the preset location in routines, such as the first, the second, etc.
 - 3) Wait a desired time to stay (the interval time between two location), and do not conduct any operation.
 - 4) Call next routine that you want to set to preset location. If there are unused preset location, add it into routine, execute in looping way the 3) and 4), or execute 5) and the set is over.
 - 5) Execute the command of setting 40th preset location, and save the set and exit in addition to calling preset location. Executing any command other than, such as up, down, right or left does not need to be saved before exit.
2. Run preset location scan: call 40th - 43rd preset locations to run 1st-4th group preset scan location series.

3.2.2 AREA SCANNING

Setting the area of scanning

Setting of the left boundary: dome is controlled to ideal position and preset location 44 is called to set the left boundary of Region 1

Setting of the right boundary: dome is controlled to ideal position and preset location 45 is called to set the right boundary of Region 1

Setting of the scanning speed: see "Menu set-> Auxiliary set"

Setting of the regional title: see "Menu set > Title Set"

Operating area scanning

Call the preset location 52-55 to operate area scanning path 1-4 respectively

Dome rotates between the set right and left boundary according to the set speed and the screen displays the corresponding regional title.

3.2.3 PATTERN SCANNING

Setting of pattern scanning

1. Call preset location 56 to start setting pattern scanning

2. Operate 'up, down, left, right, WIDE, TELE, NEAR, FAR, CLOSE and OPEN on the dome.

3. Call preset location 57-60 to save the 1-4 pattern scanning

Operation of pattern scanning

Call the preset location 61-64 to operate pattern scanning path1-4 respectively

3.3 MENU SET

3.3.1 BASIC MENU OPERATION

1. Press control on the keyboard or use matrix to execute the command of 'call 95th preset location' to enter and set main menu
2. After the main menu page appears, press 'up or down' icon to move the cursor to the sub menu option to be set and press 'right' icon to enter this submenu setting page
3. After sub menu page appears, press 'up or down' icon to move the cursor to the option to be set and press 'right' icon to change or set the content of this option
4. The contents normally fall into 2 types; Digit type and List Type. The blink indication means that the content of the option can be changed.

For Digit type: press the 'left or right' icon to select the input location, press 'up or down' icon to modify the value. To confirm and quit the option setting, move the cursor to the last digit and press 'right'.

For List type; press 'up or down' to modify the content of option and press 'right' to confirm and quit the option setting.

3.3.2 MENU SET

MAIN MENU

1. System Information: Check dome information (such as version, address, communication, etc.)
2. Camera Setting: Set the camera parameters
3. Privacy Shelter: Set the parameters for privacy masking
4. Infrared Setting: Set infrared lamp function on the camera
5. Auxiliary Setting: Set some auxiliary parameters of the dome
6. Scanning Setting: Set the scan sequence of preset location
7. Title Setting: Set regional title by input method
8. Alarm Linkage: Alarming setting
9. Language setting: Chinese and English
10. Defaulted Setting: Recovery the defaulted setting of the dome
11. Exit: Exit the main menu

3.3.3 SYSTEM INFORMATION

1. Version No. : The version number of the dome fixed ware
2. Address: Dome address to be set by dial switch
3. Communication: Communication Baud rate
4. Protocol: Communication protocol PELCO-D
5. Exit: Exit the sub menu of system information

3.3.4 CAMERA SETTING 1

1. Zoom Speed: Fast, medium and slow
2. Digital Zoom: On and off
3. White Balance: Automatic, Indoor, outdoor, manual
4. R gain: 0-225 (white balance manually effective)
5. B gain: 0-225 (white balance manually effective)
6. Exposure Setting: 0-14 (0: Darkest, 14: Lightest)
7. Backlight Compensation: On and off
8. Image Freezing: On and off
9. Next Page: Next sub menu
10. Exit: Exit the sub menu without saving the modifications
11. Save: Save the settings and exit the sub menu

3.3.5 CAMERA SETTING 2

1. Wide Dynamic Mode: Automatic, off and manual
2. Wide Dynamic Level: 0-128 (Wide dynamic manually effective)
3. Image Mirror: On and off
4. Colour-to-Black Setting: Automatic, on and off
5. Image Effect: Off, inverse colour and white-band-black
6. Image Rollover: On and off
7. Camera Display: On and off
8. Minimum Focus: 1cm, 10cm, 30cm and 100cm
9. Last Page: Last sub menu
10. Exit: Exit the sub menu without saving the modifications
11. Save: Save the settings and exit sub menu

3.3.6 PRIVACY SHELTER (OPTIONAL)

SEQUENCE	WIDE	HIGH	DIS
1	00	00	OFF
2	00	00	OFF
3	00	00	OFF
4	00	00	OFF
5	00	00	OFF
6	00	00	OFF
7	00	00	OFF
8	00	00	OFF

3.3.7 INFRARED SETTING

1. Infrared Flexibility: 0-999
2. Infrared Lamp Mode: Automatic, on and off
3. Synchronouse Colour-to-black: On and off
4. Wide Bright: 0-30
5. Enter Tele Bright: 0-100

3.3.8 AUXILIARY SETTING

1. Area Scanning Speed: Fast, Meduim and slow
2. Manual Rotation Speed: Fast, medium and slow
3. Guarding Position: Preset location 0-225 (0: closing the guard position)
4. Recall Time: Set the time for automatic recall and duration when it will not be controlled or return to the guard position. Time: 0-225s
5. Vertical Automatic Rollover: Dome 180° automatic rollover on/off
6. Setting of Status Bar: On and off
7. Zoom Rev: On and off
8. Soft Address On and Off: On and off
9. Soft Address: 001-225
10. POW Action: None, preset scan, pat scan, preset etc
11. Exit: Exit the sub menu without saving modifications
12. Save: Save the settings and exit sub menu

3.3.9 SCANNING SET

1. Setting of Area Scanning: (1-4)
2. Operating Area Scanning: (1-4)
3. Setting Presetting Scanning: (See fig. 1)
4. Operating Presetting Scanning: (1-4)
5. Setting of Mode Scanning: (1-4)
6. Operating Mode Scanning: (1-4)
7. Exit: Exit the sub menu without saving modifications
8. Save: Save the settings and exit sub menu

Fig. 1

Scanning Group No.:		1
No. Presetting bit		Time
01	001	005
02	002	005
03	003	005
04	004	005
05	000	000
06	000	000
07	000	000
08	000	000
Last Page		
Next Page		
Exit		
Save		

3.3.10 TITLE SET

1. Region No.: 1-4
2. X Co-ordinates: X position of title on the screen (0-29)
3. Y Co-ordinates: Y position of title on the screen (0-14)
4. Title: The title content in the current region. Operate “left and right” to select the position and to insert characters. Operate “Up” to exit this option.
5. Mode: Input method mode (Capitalised and lower case characters, symbols and numbers)
6. Selection of Chinese Characters: Used for the input of Chinese characters. Operate “Left and Right” to move the cursor, operate “Down” to select the Chinese character and operate “Up” to exit this option
7. Soft Key: Used for inputting characters, operate “Left and Right” to move the cursor, operate “Down” to select characters and “Up” to exit this option.
8. Delete: To delete the characters
9. Exit: Exit the sub menu without saving the modifications
10. Save: Save the settings and exit the sub menu

3.3.11 ALARM LINKAGE

1. Alarm Input: Alarm input No. (1 and 2)
2. Input Type: On and off
3. Arming Time: H : M
4. Disarming Time: H : M
5. Presetting Scanning: Linkage preset location scanning No.(0-4), 0 means scan without link presetting.
6. Pattern Scanning: Linkage pattern scanning No.(0-4), 0 means pattern scan without linking
7. Area Scanning: Linkage area scanning No.(0-4), 0 means area scan without linking
8. Alarm Output: On and off
9. Save: Save the settings and exit the sub menu
10. Exit: Exit the sub menu without saving the modifications

Note: In the case of any conflict of linkage action, the first linkage action will be executed.

3.3.12 LANGUAGE SETTING

1. Language Setting: Chinese and English

3.3.13 DEFAULTED SETTING

1. Cancel: Cancel and exit the sub menu
2. Enter: Perform the default setting and exit the sub menu

4 TROUBLESHOOTING

4.1 TROUBLE SHOOTING TABLE

Phenomenon	Possible Cause	Countermeasures
No action or image after electrifying	Power damage or insufficient power	Change it
	Error connection of power line	Correct it
	Faults of engineering route	Eliminate it
Abnormal self-inspection; image exists but with motor noise	Mechanical fault	Inspect it
	Inclined camera	Adjust it
	Insufficient power supply	Change the power complying with the requirements and put the switch power near the dome
Normal self-inspection but no image	Error video lines	Correct it
	Poor video line connection	Eliminate it
	Camera damage	Change it
Successful self-inspection but out of control	Error connection of control signal line	Correct it
	Unmatched dome address	Select it again
	Unmatched protocol or communication Baud rate	Adjust the protocol or controller to make it match and electrify again
	Too far distance and too large delay of 485 signal	Wire diameter in twisted-pair or thicker control line
Unstable image	Poor video line connection	Eliminate it
	Insufficient power supply	Change it